

REMARKS

Claims 1-6 were examined in the Office Action mailed December 18, 2008.

The following objections and rejections are currently pending:

- Objection to Claim 6 under 35 U.S.C. § 1.75(c) as being of improper dependent form.
- Rejection of claims 1-6 under 35 U.S.C. § 112, second paragraph, as indefinite, primarily due to antecedent basis issues.
- Rejection of claims 1-6 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,935,172 to Horie, *et al.* ("Horie") in view of U.S. Patent No. 6,769,298 to Matsumura *et al.* ("Matsumura").

The Applicants are requesting entry of amendments to resolve the antecedent basis issues, and to cancel claim 6. Entry of these amendments to place the claims into condition for allowance, or at least in better condition for appeal, is respectfully requested.

1. The Claim Objection and § 112 Issues Would Be Addressed. The Applicants are requesting entry of amendments to cancel claim 6 (without prejudice to the subject matter therein) to render the pending claim objection moot, amendment of claims 2-3 to refer to "a second resistor," and an amendment to claim 5 to recite "said flow rate detecting circuit" (claim 4 was identified as containing the objected to "means," however, this "means" is only present in claim 5).

Because no further search would be necessitated by these amendments, and their entry would place the claims into better condition for allowance or appeal, entry of the requested amendments is respectfully requested.

With regard to claim 1, the Applicants submit that one of ordinary skill in the art would readily understand that the “temperature control circuit” and the “heating temperature control means” are different, and that when viewed in the context of the original disclosure as required, it is clear exactly what circuit and means are being identified (and thus claim 1 is sufficiently definite under § 112, second paragraph):

Temperature Control Circuit. As noted at pages 9-10 of the Specification, Fig. 3 illustrates “a drive circuit for supplying a current to the heating resistor 5 ... performing heating temperature control.” This temperature control circuit includes differential amplifier 12, transistor 13 and power supply 14 for “controlling the current supplied to the bridge circuit (*i.e.*, ultimately to heating resistor 5). Thus, one of ordinary skill would be unmistakably understand what is recited as the “temperature control circuit.”

Heating Temperature Control Means. The “heating temperature control means” is disclosed in the Specification as means which has a temperature coefficient which is different from the rest of the bridge resistors’ coefficients, such that as temperatures change, the means alters the heating temperature response of the device, *e.g.*, as compared to the prior art, rather than maintaining a constant temperature differential as the temperature changes from 20°C to 80°C, the heating temperature control means causes the temperature differential to change (for example, to shift from a delta of 150°C to a delta of 145°C over the 20°C-80°C temperature change). In the first disclosed embodiment, the element with a different temperature coefficient which causes

the temperature differential to change is fixed resistor 6b (*see* Fig. 3; Specification at 11:4-19 (“the fixed resistor 6b connected to temperature compensation resistor 6a in parallel *serves as heating temperature control means* ...” (emphasis added)); 12:7-22 (describing the effect of the fixed resistor on temperature differential); in the second disclosed embodiment, the means is resistor 29 (*see* Fig. 15; Specification at 25:6-13).

In view of the foregoing, the Applicants submit that the recited circuit and means would be clearly understood by one of ordinary skill in the art, and therefore the claims are sufficiently definite for the purposes of § 112, second paragraph.

2. The Claims Are Patentable Over The Cited References. The Applicants respectfully request reconsideration and withdrawal of the § 103(a) rejection based on the combination of Horie and Matsumura.

As a first matter, the Horie reference is cited as teaching the claimed heating temperature control means “causing a difference between the fluid temperature and the temperature of said heating resistor to be changed *depending on the fluid temperature.*” December 18, 2008 Final Office Action at 3 (emphasis added). In fact, as shown in Horie Fig. 4, this reference only discloses altering the temperature of the heating resistor *depending on the fluid flowrate.* As one of ordinary skill in the art will recognize, fluid flowrate and fluid temperature are *not* readily substitutable for the other. For example, the change in heat energy transfer to a sensor from a high flowrate fluid having only a small temperature change may be equal to a change in heat energy transfer from a low

flowrate fluid which experiences a large temperature change, and therefore one cannot deduce the temperature of the fluid directly from its flowrate. Thus, the fact that Horie teaches a correlation between the temperature of its heating resistor and flow rate in Fig. 4 does not teach or suggest the present invention's focus on the relationship between fluid *temperature* and adjustment of the temperature difference between the heating resistor and the temperature of the fluid being maintained by the heating temperature control means.

As an additional ground for withdrawal of the pending rejections, the Applicants submit that the Matsumura reference does not teach or suggest the feature for which it is cited. As the pending Office Action acknowledges, Horie does not teach or suggest the claimed temperature sensor for measuring a temperature in a casing, and using the measured casing temperature to correct the information being provided by the temperature measuring resistors (in the present first embodiment, resistors 9, 10). Matsumura is cited as teaching a casing temperature measurement sensor, however, the cited sensor only measures highly localized circuit temperatures, and does not provide any indication of the casing temperature.

As shown in Matsumura Fig. 3 (reproduced for the Examiner's convenience, below), the circuit board 11 contained within casing 13 has on its surface a small electronic circuit 100. As further shown in Matsumura Fig. 1 (also reproduced below), this circuit 100 has, in the lower left hand corner, a temperature sensor 61 on "chip temperature sensor circuit 60." As clearly set forth in the Matsumura written description, this temperature sensor is neither

FIG. 3

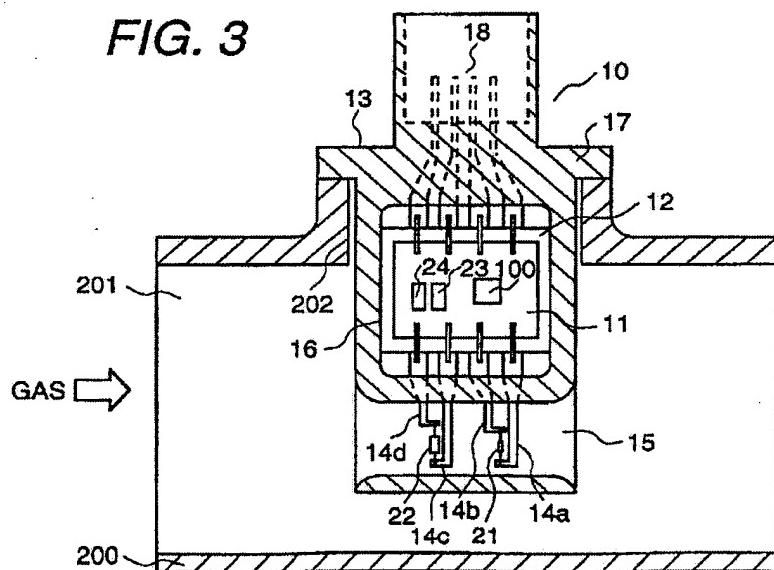
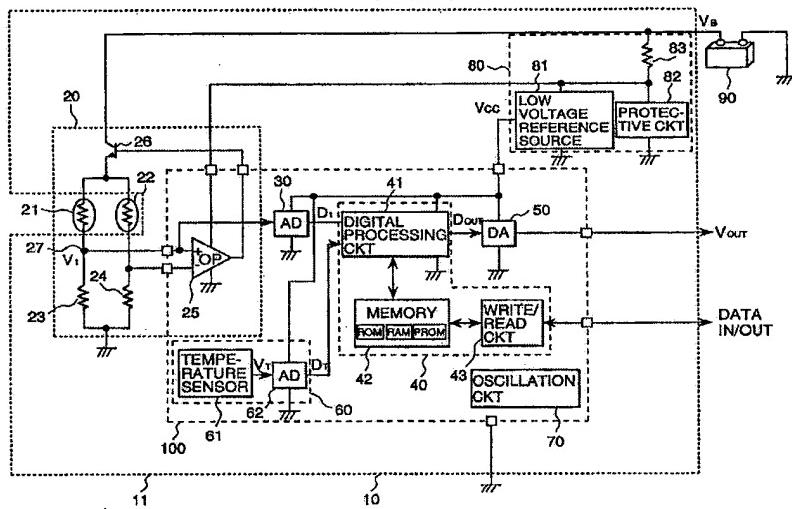


FIG. 1



located where it can obtain a temperature from a wall of the casing 13, nor even intended to obtain any temperature indicative of the environment at or around the casing.

Rather, the *sole* purpose of this "chip temperature sensor circuit" 60 is to detect, and provide a correction for, the effects of *the electronic circuit on which it is mounted*: "The chip temperature sensor circuit 60 is a circuit which obtains

temperature information for correcting a temperature-dependent error *in a series of signal processing circuits* including the power source circuit 80 [i.e., the circuit elements also located in substrate 11] and is provided with a chip temperature sensor 61 and a chip temperature signal analog-digital conversion circuit 62.” Matsumura at 5:22-27 (emphasis added).

Thus, contrary to the assertion in the pending Office Action, the Matsumura reference does not teach or suggest a temperature sensor “for measuring a temperature in said casing,” but instead only measures a temperature of the *circuits* housed within the casing to correct *circuit-generated* temperature-induced signal processing errors, not casing-induced temperature effects.

Because neither Horie nor Matsumura teach or suggest all of the features of the invention for which they are cited, and further because even if combined the present invention would result (Matsumura not providing a casing temperature sensor teaching to cure Horie’s lack of teaching of this feature), claims 1 and 4 and their respective dependent claims 2-3 and 5 are patentable over these references under § 103(a). Accordingly, reconsideration and withdrawal of the pending § 103(a) rejection is respectfully requested.

CONCLUSION

In view of the foregoing requested amendments and remarks, the Applicants respectfully submit that claims 1-5 are in condition for allowance. Early and favorable consideration and issuance of a Notice of Allowance for these claims is respectfully requested.

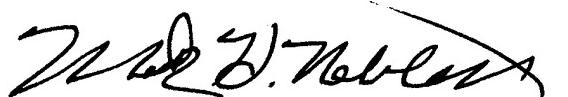
Ser. No. 10/580,112
Atty. Dkt. No. 056205.57746US
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If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #056205.57746US).

Respectfully submitted,

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